

## Patent Claims

### Grooved Rail Frog

1. Grooved rail frog (10) including a frog intersection region (16) formed by intersecting grooves (12, 14) as an overrun region as well as two construction profiles (18, 20),  
5 extending in the longitudinal direction of the frog and being connected with each other, with external fishplate chambers (22, 24) with lining pieces (30, 32) arranged therein, which are connected non-positively with the construction profiles by means of at least one tightening element (34), such as screw bolts, penetrating these, wherein the frog intersection point region comprises an interchangeable insert (36), which is arranged non-positively in a recess, wherein the recess accommodating the insert (36) is delimited by  
10 segments of the lining pieces (30, 32) arranged in the outer fishplate chambers (22, 24) of the construction profiles (18, 20), and wherein the insert is fixed in place in relation to the lining pieces.
2. Grooved rail frog according to claim 1, wherein the insert (36) is delimited by the  
15 segments of the lining pieces (30, 32) as well as by segments of the construction profiles (18, 20), especially by bars of the construction profiles.
3. Grooved rail frog according to claim 2, wherein the insert (36) has outer surfaces (42, 44) running inclined toward the vertical, wherein at least one wedge element (38, 40) rests on each outer surface with a first surface (52, 54) corresponding to the course of the outer  
20 surface, and wherein the wedge element is braced with a second surface (56, 58) running opposite to the first surface on one of the lining pieces (30, 32), respectively.
4. Grooved rail frog according to at least claim 2, wherein the wedge element (38, 40) has a trapezoidal shape in section with larger base segments (60, 62) running on the travel surface side.
- 25 5. Grooved rail frog according to at least claim 2, wherein the wedge element (38, 40) is penetrated by a screw element (64, 66) such as a hexagon cap screw, which can be tightened in relation to the lining piece (30, 32).
6. Grooved rail frog according to claim 5, wherein the screw element (64, 66) is a hammer head screw or engages in a T-shaped tenon block (68, 70), which extends in a T-shaped  
30 groove (72, 74) running in the lining piece (30, 32).

7. Grooved rail frog according to at least claim 1, wherein the lining piece (30, 32) has on the side facing away from the insert a bar-like segment (80, 82) extending approximately to the plane formed by the travel surface of the frog (10), and wherein the intermediate space (88, 90) between the bar-like segment and the insert (36) is covered.
- 5 8. Grooved rail frog according to claim 7, wherein the intermediate space (88, 90) containing the wedge element (38, 40) is covered by a protective element or sheet (76, 78) that runs above the wedge elements and on the outside preferably in the plane formed by the travel surface of the frog (10).
- 10 9. Grooved rail frog according to claim 8, wherein the protective element (76, 78), which preferably tapers conically in the direction of the intermediate space (88, 90), is sealed off against the lining piece (30, 32) or its bar-like segment (80, 82) as well as the insert (36), for example by a rubber seal (92, 94).
10. Grooved rail frog according to at least claim 1, wherein the construction profiles (18, 20) run parallel or basically parallel to one another in the region of the insert (36).
- 15 11. Grooved rail frog according to at least claim 1, wherein the construction profiles (18, 20) running diverging in relation to one another outside the insert (36) are braced against one another by means of an intermediate element such as wedge braces (96) and are screwed together in a highly rigid manner by means of at least a second tightening element (98).
- 20 12. Grooved rail frog according to at least claim 1, wherein the lining pieces (30, 32) are embedded in a form-locking manner in the outer fishplate chambers (22, 24) and screwed together in a highly rigid manner with the construction profiles (18, 20) with systematic prestressing.
- 25 13. Grooved rail frog according to at least claim 1, wherein the insert (36) is arranged in a non-positive and form-locking manner in the recess delimited by the construction profiles (18, 20) and the lining pieces (30, 32).
14. Grooved rail frog according to at least claim 3, wherein the outer surfaces (42, 44) of the insert (38) running inclined toward the vertical have an incline between in particular 1:5 and 1:7, preferably 1:6.